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ABSTRACT

As the result of an analysis and synthesis of reading comprehension skills studies, it was suggested that teachers attempt to simplify comprehension questions by recognizing two basic types: literal and nonliteral. It was noted that a student's success in obtaining meaning depends on (1) his competency in determining word meaning, (2) his understanding of word function and phrase-structure relationships, (3) his set awareness, (4) his mastery of reading skills, and (5) his teacher's attitude and competency. It was contended, after considering the factor-statistical analysis and the logical analysis approaches to determining reading comprehension skills, that a lack of consensus results necessitates the use of the simplified eclectic approach. Literal comprehension would include recalling fact and detail and determining the main idea of a passage; nonliteral comprehension would involve making decisions and judgments based on reading and relating reading experience to previously acquired knowledge and to other content. Determining cause and effect, making inferences, evaluating and criticizing, and determining authors' intents were given as nonliteral comprehension activities. Sample literal and nonliteral questions used in teaching and references are included. (BT)

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A LOGICAL ANALYSIS OF READING COMPREHENSION SKILLS IN THE SOCIAL STUDIES

Introduction

The following elements appear to be crucial in determining the degree of success students will have in obtaining meaning from sentences, paragraphs or passages:

1. Students must have a certain degree of competency in determining what words mean. Underlying this level is the individual's verbal ability or level of vocabulary. This ability includes knowing synonyms, shades and varieties of meanings, and connotative and donotative meanings. Basic to understanding then is a certain degree of lexical sophistication.

2. A pupil must also know how words function. This skill involves both syntactical and grammatical operations of the language. In this case, students must be able to meaningfully handle or program such grammatical elements as: word order, form classes, (names of things, actions, qualities, and manners), and function or structure words.

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The student needs to develop a functional knowledge of how words work in harmony to form phrases and how phrases are combined into sentences. Additionally, the pupil must identify the grammatical and syntactical foibles of each newly encountered passage. Hence, he needs to follow the authors thought patterns or identify the authors writng style.

3. The set of the student, while reading, has a decided effect upon his understanding of a passage. Successful comprehension is related to the student's purpose for reading a selection; his interest in the material being read; his familiarity with the concepts presented in the selection; and finally, with the ease or difficulty of the passage.

4. Reading comprehension is also affected by the kinds and degrees of "mechanical" reading skills each student has mastered. The pupil must have some proficiency in word attack skills, i. e., he needs to know how to sound out newly encountered words and determine their meanings. He may need to draw upon context for some word meanings. He will also have to adjust his reading speed to accomodate ease or difficulty of certain passages.

5. Finally, each teacher plays a major role in setting the stage for reading comprehension success. Teachers need to provide efficient ways for growth of all of the previously mentioned elements. The types and kinds of comprhension questions the teacher asks pupils will basically determine the outcome of comprehension skills. Also, at what point questions are asked seems to be related to comprehension

proficiency. Frase (2) found that a few questions interspersed at relatively frequent intervals throughout a reading passage were more effective aids to cpmprehension than were factual questions presented prior to reading a selection. This result caused Spache and Spache (7, p. 468) to caste doubt on teachers attempts to improve comprehension by asking pupils to preread questions. They said... "prereading factual questions dees not help pupils to read 'more carefully' or to show greater overall comprehension. Rather, this practice tends to reduce the depth of comprehension and limit the reader's retention of information not directly related to the questions."

Approaches to Analyzing Reading Comprehension Skills

At least too appraoches can be taken when attempting to analyze reading comprehension skills.

One procedure is aptly called the statistical approach. Using statistical techniques, mainly correlational analysis or factor analysis, a researcher attempts to define comprehension skills as they are measured by objective test items. A subtest is frequently devised to objectively measure a specific skill, for example, locating the author's point of view. A battery of such tests is then administered to a group of subjects. An examination of the intercorrelations among the various subtests provides the first step in the statistical analysis of the uniqueness of such subtests. In order for each subtest to be statistically independent or unique, the correlation coefficient between

two variables must be significantly less than 1.0. It is well known that correlations among most reading subtests are quite high. Because of high subtest intercorrelations, some authorities have concluded that the subtests are measuring essentially the same general trait, namely reading comprehension. However, even when subtests are highly interrelated there appear to be qualitative differences in the mental operations required for an individual to successfully complete tasks, for example, of a recall versus an inferential nature. The high intercorrelations indicate a consistency in pupil ranking on the various subtests. Such correlations imply that pupils who have facility with recall operations have about the same degree of facility with items requiring inferential ability. These correlations do not mean that after intensive training in learning to recall facts a student will also be better able to infer.

Factor analysis procedures have been frequently utilized to ascertain the dimensions of reading comprehension. See, for example, Davis (1), Hall and Robinson (3), Thurstone (9), Stolurow and Newman (8), and Weaver and Kingston (10). However, because of procedural variations, differing populations of interest, and varying measures of reading comprehension such investigations have not been particularly fruitful in isolating commonly interpretable factors that contribute to an adequate definition of reading comprehension.

Perhaps as a result of this lack of consensus concerning the "factors" of reading comprehension, a variety of standardized tests are available which provide scores for a great number of reading skills. Lennon (4) noted that from an examination of test catalogs one could easily locate 70 or 80 alleged reading skills or abilities. He also pointed out that it would be naive to assume that there is substantial agreement between each skill and its corresponding test name. This implies, of course, that any two reading tests or subtests within a given test do not necessarily measure different skills simply because they have different titles. Thus, any consumer of these tests must perform a logical analysis of each test and decide the extent to which the tasks do fit the title.

A second procedure for defining comprehension skills is a logical analysis. Skills are defined in terms of how experts in reading understand or see the process, how teachers define the process, or what they feel a pupil must do operationally or mentally to correctly complete a reading comprehension task. Comprehension skills are also logically defined when methods and materials are devised to increase pupils proficiency in specific skills. Consequently, a wealth of materials are available purporting to help students read to recall details, make judgments, evaluate propaganda, etc.

Logical definitions are by their nature subjectively determined. Researchers attempt to analyze the tasks or steps involved in the comprehension process, or any other

psychological process. Marks and Noll (5) provide a logical definition of the comprehension process by analyzing the tasks involved when an individual answers a reading comprehension test question. The task before the examinee is one of recognizing a rule or set of rules which relate to the elements in a particular reading passage. They characterized the reading comprehension task as follows: (1) an initial stimulus input, presented to the subject in the form of visual or aural material, either a word, sentence, paragraph, or story, (2) a subsequent stimulus input, again presented in the form of visual or aural material and related to the initial stimulus input, (this stimulus is the set of questions relating to the reading passage) and (3) a response or set of responses governed by the two stimulus inputs. On the basis of the pupils response(s), the examiner infers whether the rule(s) have been correctly formulated. The response, while tied to the two stimulus inputs, is presumed to be function of some intervening process which the scores of the test are assumed to reflect. The intervening process is what has been called reading comprehension. In developing a formal "model" of the comprehension task, Marks and Noll make the "strong assumption" that the response elicited should be independent of any specific previous knowledge. This assumption insures that responses are tied solely to the stimulus inputs and indicate the pupil's ability to integrate, abstract or manipulate the inputs to attain the correct response.

Making A Logical Analysis of Comprehension Skills

Because of a lack of consensus among reading experts regarding the number and scope of reading comprehension skills, it is suggested that teachers attempt to "simplify" comprehension questions to the following two types: literal and non-literal.

Literal comprehension questions would include those operations that require a pupil to recognize or isolate a specific item or group of items obtained within a reading passage. Literal operations then, should be limited to making choices or decisions from the content of what is immediately read. Into this category would fall such tasks as recall of facts or details and determining the main idea of a passage. The following questions are examples of literal comprehension items.

1) In what year did Columbus discover the New World?

2) In Mexico, we plan to visit a particular village on its market day, which is held the same day every week. On that day, the natives carry their wares to the local market place for sale. They have colorful baskets of straw, pottery of all shapes, beautiful leather handbags, belts, and brightly colored wollen shawls, which they have made themselves.

What do we plan to visit in Mexico?

1) bullfight

2) pottery factory

3) market

4) gardens

How often is the market held?

1) weekly
2) monthly
3) daily
4) yearly

What do the natives sell at the market?

1) pottery
2) home-made goods
3) belts
4) shawls

Directions: Select the numbered sentence that best expresses the main idea of the paragraph.

3) (1) An Indian boy learned to run long distances and make himself strong. (2) He had to go without food to develop self-control. (3) He had to let others beat him so that he might learn to suffer in silence. (4) The Indians admired courage and endurance above everything else. (5) However, the men often required the women to do all the field work.

Non-literal comprehension activities would include those operations that require the pupil to read material, make decisions or judgments about it and also relate the content of the passage to some other previously acquired knowledge. Non-literal comprehension operations are utilized when a pupil needs to recall previously learned material and synthesize or relate it to what is presently being read. This category would be composed of the following types of comprehension activities: determining cause and effect, making inferences, reading to make judgments or evaluations, critical reading activities,determining the author's intent, etc. The following items might be considered examples of non-literal comprehension activities:

1) Most of the cotton used in this country is grown in southern states because:
   1) there are many large farms in the South.
   2) cotton requires a long growing season.
   3) most cotton factories are in the South.
   4) cotton seeds are plentiful in the South.
2) No fragments of pottery have been unearthed from the ruins of this city by archaelogists. Apparently its inhabitants did not know how to:
   1) cook food.
   2) raise crops.
   3) make earthen dishes.
   4) build fires.
3) What were the implications of the discovery of America on the Old World?

Some Suggested Activities for Teaching Comprehension Skills

Main ideas and Related details

The following activity might be effective in teaching pupils to determine the main idea and relavant details of a paragraph.

1) Determine the main idea by analyzing paragraph structure. (Illustrate location of each paragraph by using the figures below; the topic sentence is designated by the circle at the point of the triangle.)
2) Introduce paragraph pattern 1 before 2 and so on.

3) Ask pupils to underline the topic sentence in a paragraph. Determine into which pattern the paragraph might be classified.

Examples of paragraph structures:

1) All the peoples of the Mediterranean hold the olive tree sacred. It happens but seldom that a symbol is as useful as it is beautiful. Oak and beech, linden and birch do not determine the lives of their native lands; they might conceivably die out. But take away the olive tree and there would be no life on the Mediterranean. The date palm is as rich for it houses, clothes and feeds whole tribes in North Africa. But the olive trees are infinitely more numerous and olives are more abundant so they support more human beings than any other tree in the world. They demand almost nothing, neither rain nor hard work, yet they give more than any other tree can produce.

2) To begin with, the transistor is much smaller than the vacuum tube. One model is about half the size of a pea and smaller ones can be made if they are wanted. Further, there is no vacuum and no glass envelope, no filament to burn out. Finally, the transistor consumes vanishingly small amounts of power and generates almost no heat. These two properties alone make the transistor invaluable, for it appears that the two principal obstacles to new electronic wonders have been the large amount of power required and the heat given off by the vacuum tube.

3) The doctrine of racism is not particualrly new and Hitler was by no means its originator. The Japanese were also attracted to it and summed it up in the slogan, "Asia for the Asiatics." In this country the Ku Klux Klan espoused it for many years and since the war it's been enunciated by an organization in Atlanta, Georgia, called the Columbians. The theory of racism can be reduced to the simple proposition that one particualr race is superior in intelligence, ability, and other desirable qualities. The Columbians say frankly in their charter that they aim to "Encourage people to think in terms of race, nation, and faith." There leader has repudiated the idea of an American melting pot.

4) The atomic test was scheduled for May tenth. All the necessary apparatus was in readiness, with each man trained to his job. Some five-hundred scientists, government officials, and newspaper reporters were on hand to witness the spectacle. But at the last minute unfavorable weather conditions developed and the test was postponed.

5) The soil in this coastal area is not favorable to orange culture. It is largely glacial rubble with insufficient nutriment to support even the sturdiest seedlings. Fog and rain are with us at all seasons of the year and there is little good, warm sunshine to ripen the fruit. Migrant workers are numerous, but they are used to digging for beets and know nothing of the care of citrus groves.

If additional activities of this type are needed, suggest to pupils that they rewrite paragraphs of pattern one into types typified by pattern two. Or suggest they rearrange the topic sentence within a paragraph until they have a reasonable representation of all five paragraph patterns.